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An online credential repository for the Grid: MyProxy

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Abstract

Grid portals, based on standard Web technologies, are increasingly used to provide user interface to computational and data grids. However, such Grid portals do not integrate cleanly with existing systems such as the Grid Security Infrastructure (GSI), due to lack of delegation capabilities and mechanisms. We solve this problem using an online credentials repository system, called MyProxy, which allows Grid portals to use the GSI to interact with Grid resources in a standard, secure manner. This paper, which satisfies the requirements of Grid portals, give an overview of the GSI, and demonstrate how MyProxy can be used to function together. The architecture and security of the MyProxy system are described in detail.

Index Terms

Inspec

Controlled Indexing

Internet, authorisation, distributed databases, distributed programming, information resources, online front-ends, online operation, user interfaces

Non-controlled Indexing

Grid Security Infrastructure, Grid portals, Grid security systems, MyProxy, Web technologies, computational grids, data grids, delegation capabilities, online credential repository, system architecture, user interfaces

Author Keywords

Not Available

Medical Subject Heading (MeSH Terms)

Not Available

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No references available on IEEE Xplore.

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 R Butler, DE Von Welch, I Foster, S Tuecke, J ... - COMPUTER, 2000 - doi.ieeecomputersociety.org
 ... browser to provide the tag and **pass phrase** to the ... Users can present their GSI
credentials for authentication ... more complicated, such as the **wrappers** around the ...

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 ... **credentials**. ... at SDSC uses Perl CGI scripts[14] that simply **wrap** the myproxy ...
 get-delegation program with the appropriate user identity and **pass phrase** passed ...

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TJ Hudson, EA Young - 1997 - [di.unimi.it](#)
 ... PEM format of the **key** with a **pass phrase** using DES ... the standard certificate exchange)
 their Unix **credentials** including their ... eg SunOS 5.x), a **wrapper** to perform ...

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 ... review of data against **credentials** Certificate authority ... effort to determine the
passphrase required to ... 132, create a certificate, **wrap/encrypt** the certificate ...
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 ... able **wrapper** file system. ... up file, but using the ownership and group **credentials**
 of the ... ID as the process that originally received the user's **passphrase** ...

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C Tschudin - LECTURE NOTES IN COMPUTER SCIENCE, 1999 - Springer
 ... service may depend on a continuous stream of **credentials**. ... The **pass-phrase** is hashed
 using the MD5 digest ... **encrypted** and emitted inside the "wrapper" code as ...

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WB Sweet, JJ Yu - US Patent App. 09/930,029, 2001 - Google Patents

... Permission **Credentials** Information Contained in **Encrypted** Object Transmit **Security**
 Profile Over the Network 615 Generate Cryptographic Working **Key** Transmit ...

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[PDF] ► [Flexible Key Management with SFS Agents](#)

M Kaminsky - 2000 - [pdos.lcs.mit.edu](#)

... The **passphrase** allows the user to safely store an ... user access remote files with
 different **credentials**—for instance as ... ssu is a **wrapper** around the setuid Unix ...


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J Novotny, S Tuecke, V Welch - Proceedings of the Tenth International Symposium on High ... , 2001 - doi.ieeecomputersociety.org

... allow HTTP connections secured with **SSL** encryption (HTTPS ... captured **pass phrase**, the compromised **pass phrase** could be ... to constantly decrypt the portal **key** can be ...

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[A National-Scale Authentication Infrastructure](#) - ► [udc.es](#) (PDF)

R Butler, DE Von Welch, I Foster, S Tuecke, J ... - COMPUTER, 2000 - doi.ieeecomputersociety.org

... 68.4, with one distinction: We use **SSL** rather than a ... to provide the tag and **pass phrase** to the ... SSH supports multiple mechanisms—Kerberos, RSA **key** pairs, and ...

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[HTML] ► [SSLeay Programmer Reference](#)

TJ Hudson, EA Young - 1997 - dl.unito.it

... format of the **key** with a **pass phrase** using DES ... a **password** and can then return the **key** any number ... pushed STREAMS module that provides transparent **SSL** support for ...

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[The Grid Portal Development Kit](#) - ► [cogkits.org](#) (PDF)

J Novotny ... - Concurrency and Computation: Practice and Experience, 2002 - doi.wiley.com

... implemented over the Secure Sockets Layer (**SSL**) and is ... One of the **key** difficulties in developing a portal ... enter the same user name and **pass phrase** from their ...

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P Hallam-Baker, S Author - W3C Note, March, 2001 - verisign.com

... 26 3.3.4 <ProcessInfo> 27 3.3.5 <PassPhrase> 27 ... 28 3.3.9 Faults 29 4 **Key Registration Service** Protocol Overview 30 4.1 Linkage to an Underlying PKI 30 ...

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... and with some effort to determine the **passphrase** required to ... to create a Secure Socket Layer (**SSL**) session between ... the certificate in a public **key** and decrypt ...

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[PDF] ► [Flexible Key Management with SFS Agents](#)

M Kaminsky - 2000 - pdos.lcs.mit.edu

... and applies it to the web and **SSL** [FKK96 ... The **passphrase** allows the user to safely store an encrypted ... and certification programs as tools for doing **key** management ...

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WB Sweet, JJ Yu - US Patent App. 09/930,029, 2001 - Google Patents

... AND APPARATUS FOR A WEB-BASED APPLICATION **SERVICE** MODEL FOR ... values, a file header encrypting **key**, the mem- ber's access permissions **credentials**, and domain ...

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[PS] ► A use-condition centered approach to authenticated global capabilities: Security architectures for ...

W Johnston, C Larsen - 1996 - www-itg.lbl.gov

... and the Secure Sockets Layer [SSL] to provide ... **credential** databases (institutional/group / individual server ... Identity certificates (Public-key Infrastructure) ...

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[book] **Network Security with OpenSSL**

J Viega, M Messier, P Chandra - 2002 - books.google.com

... is kept secret from those without the proper **credentials**, even if ... As a result, most systems that use public **key** cryptography, **SSL** included, use it ...

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[PDF] ► Peer-to-peer solutions in the Semantic Web context: An overview

R Siebes - EU-IST Project IST-2001-34103 SWAP, Vrije Universiteit ... , 2002 - swap.semanticweb.org
... of a centralized server that could be a bottleneck in CPU or **storage** capacity and ...

WSDL is a **key** part of the effort of the Universal Description, Discovery and ...

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CD Agar, NAVAL POSTGRADUATE SCHOOL MONTEREY CA - 2001 - cisr.nps.edu
... 183 9. Secure Dissemination & **Storage** of QoS ... Association and **Key** Management Protocol (ISAKMP). ... system unifies the elements of security policy, **credentials**, ...

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... Can Be Evaded Secret Cryptographic Algorithms Are Not Secure If a **Key** Is Not ... The Digital Millennium Copyright Act includes a **provision** designed to prevent the ...

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N Chawla - 2002 - cise.ufl.edu
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B Blobel, B Baum-Waidner - Implementing Secure Health Telematics Applications in Europe ... , 2001 - books.google.com
... to a security problem we mean that **key** escrow or **key** recovery can ... In centralised information systems logical recording, processing and **storage** of information ...

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Method and system for transcribing electronic affirmations

CPK Smithies, JM Newman, B Wright - US Patent 6,091,835, 2000 - Google Patents
... such as that the affirming party: i) is in fact the identified party; ii) understands that by entering affirming data, eg a password, **key**, biometric sample or ...

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... only for data transmission, but also for data **storage**. ... As a result secure **key** handling


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M Thomas, M Dahan, K Mueller, S Mock, C Mills, R ... - Concurrency and Computation: Practice and Experience, 2002 - svn.globus.org

... system: at login, a valid username and **passphrase** will result ... by SSL using a 56- or 128- bit **key**. ... user has presented the portal with this **credential**, the user ...

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[PDF] ► Network security with OpenSSL

P Chandra, M Messier, J Viega - 2002 - infosecurity.org.cn

... secret from those without the proper **credentials**, even if ... to see garbled data that is essentially "locked," but they ... thing that needs to be secret is the **key**. ...

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ML Smith - 2000 - citeseerx.ist.psu.edu

... **credential** issued by a trusted authority that individuals or organizations present to prove ... message encrypted with the private **key** can be decrypted with the ...

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A Che - Computer Science Department, Stanford University, 2001 - austinche.name

... 6 Nothing needed to be carried around, except maybe a **pass phrase** in one's head and a smart card in one's **wallet**. ... A **key** or **passphrase** must be obtained ...

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CF Endorf - 2001 - books.google.com

... For example: An account that has been **locked-out** after ... Something You Know — A Password, **Pass Phrase**, or Personal ... Security problems occur, if a **key** is lost or ...

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V Vinge - 2001 - books.google.com

... Namely, dig -ital money, anonymous e-mail, and all of the other issues connected with "strong cryptography" and "public **key** cryp -tography. ...

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V Verisign - 1996 - ncsu.edu

... in two physical locations to protect against attacks on a single **credential** server ... The private **key** itself is stored in encrypted form on the Enterprise Roaming ...

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... data migration, replication, data **storage**, data transfer ...

technologies.....139 III.3.7 **Key** features of ...

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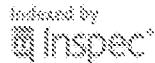
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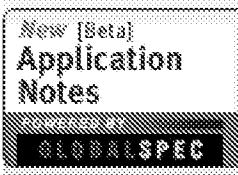
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